

A Few Sparrows

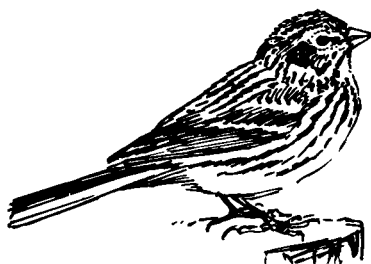
By E. LAURENCE PALMER

*Illustrations by Louis Agassiz Fierles, Copyright by
Slingerland-Comstock Company*

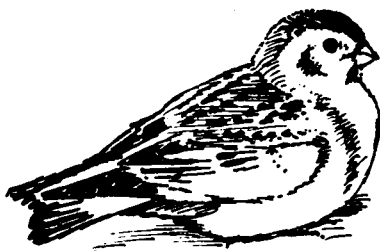
*This is the fifty-seventh in NATURE
MAGAZINE'S series of educational
inserts.*



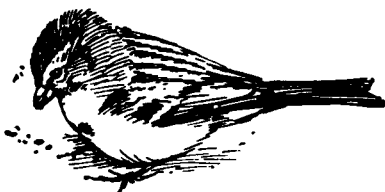
SONG
SPARROW



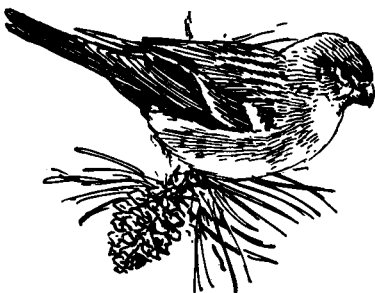
VESPER SPARROW



SNOW BUNTING



TREE SPARROW



PINE GROSBEAK



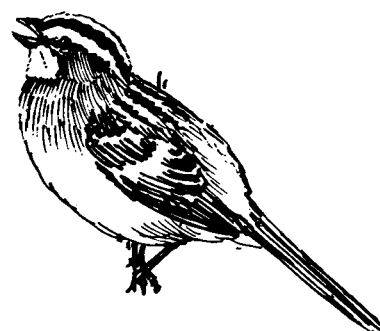
FOX SPARROW



FIELD
SPARROW



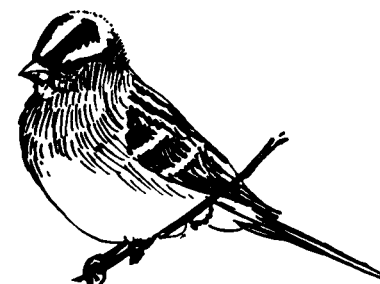
CHIPPING SPARROW



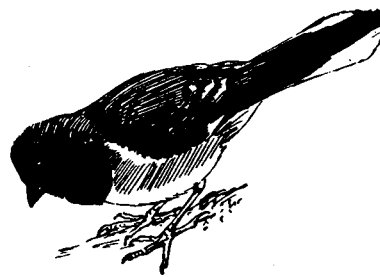
WHITE-THROATED SPARROW



SEASIDE SPARROW



WHITE-CROWNED SPARROW

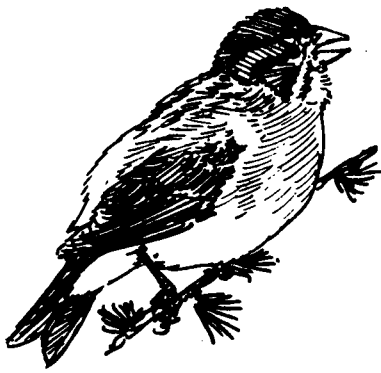


TOWHEE OR CHEWINK

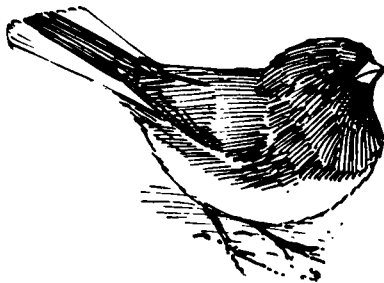
THE tenth chapter of the Book of Matthew may have conditioned many of us as to the relative value of sparrows, when it suggests that two of them are worth but a farthing, and then attempts to suggest that each of us is certainly worth many sparrows. Then we read in our daily newspaper that each American citizen in 1950 is in debt \$1608.08, and we wonder if we really can reduce values that are real to farthings, dollars, yen, or what have you. I rather think that real appreciation of sparrows will not come through trying to evaluate them by reading that, a half-century ago, one of our eastern cities had 80,000 snow buntings in cold storage in the markets for sale, or that tree sparrows each year eat 875 tons of Iowa weed seeds, or even that 73 percent of the contents of the stomachs of 170 grasshopper sparrows consisted of kinds of life injurious to man's interests.

To be sure, we have to be, or at least appear to be, objective in these matters now and then, but who can put a mercenary value on the song of a white-throat, the daintiness of a chipping sparrow, the exuberance of a song sparrow at his best, or the splendor of a cardinal, even at his worst. I, for one, refuse to accept as a measure of real worth of these birds any of the statements I have read in research bulletins, *The Bible*, or the daily press. And the longer I know them, the greater is their worth to me in values of the most enduring sort. I hope that this insert in our series may strengthen the reader's appreciation of these birds.

Lincoln is reported to have said that the Lord must have loved the common people since he made so many of them. By the same token sparrows must rank high. Not only are they individually abundant, but the average American locality probably can boast a bird fauna of more than 200 species, of which



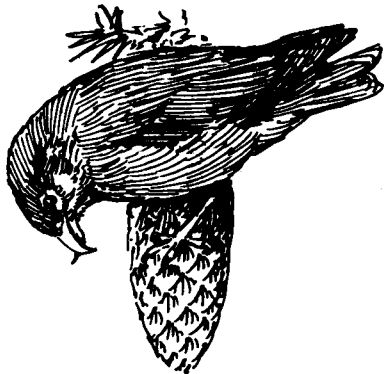
PURPLE FINCH



JUNCO



SWAMP SPARROW



RED CROSSBILL



INDIGO BUNTING

about one-fourth are probably sparrows and warblers and there are usually more sparrows than warblers. The family Fringillidae is by some considered the largest of bird families, containing at least a hundred genera and at least 500 species. Its members are found native in nearly every part of the world, and so, whether we place a high or low value on them, they are bound in some way or another to influence all men, and consequently are worth knowing better.

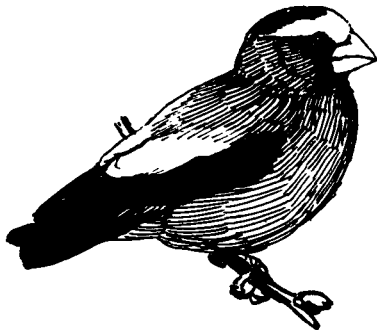
One cannot write the sparrows off as being dun and unattractive. If we seek birds of brilliant coloration we can find nothing redder than a cardinal, nothing bluer than a mountain bluebird or indigo bunting, nothing yellower than a goldfinch in breeding plumage, and probably nothing with greater contrasts of light and shade than a rose-breasted grosbeak. True, there is a great host of more or less nondescript species, but even they, when studied with only reasonable care, yield characters that are amply definitive, and sometimes wonderfully challenging, when contrasted with the blatant features of those species mentioned earlier.

If we attempt to evaluate our birds because of their songs, the sparrows cannot be given second-fiddle seats in our bird orchestra. The ringing whistle of a cardinal is in keeping with the striking coloration of the bird, and no one who has listened to rose-breasted grosbeaks, chewinks, song sparrows, individual dickcissels or flocking goldfinches will question their musical abilities. Then, if you favor plaintive sounds, or the kind that you strain to hear and glow when you succeed, you cannot beat the white-throat, the grasshopper, the white-crowned or the savannah sparrows. Dr. Gardiner Bump, who has spent most of his professional life with the problems associated with maintaining an adequate supply of game birds for the hunters, was once so affected by the song of a common vesper sparrow that he wrote the following:

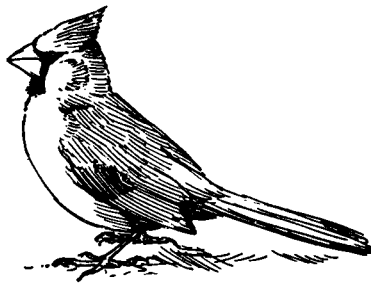
“Twilight and twinkling evening star,
A shepherd with his sheep, afar;
No breath, the quietness to mar,
Earth’s heaven, anywhere.
Hearts beat in tune to lesser things,
When lo, through gathering dusk there rings
That low, sweet song the Vesper sings —
A sparrow at his prayer.”

There may be those who contend that there is nothing of beauty or commendable in the incessant chatter of the common house or English sparrow of our streets and yards. This does not affect the reputation of our American sparrows, since the English sparrow is considered as being a weaver bird of the family Ploceidae, while our sparrows belong to the Fringillidae, which includes the buntings, finches and sparrows.

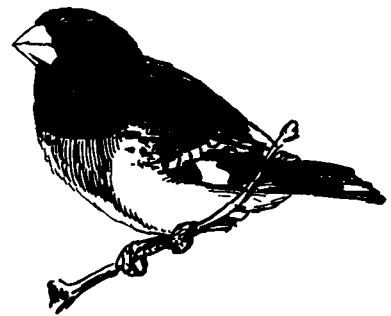
So varied are our sparrows in color, song, and other characters, that it is not surprising to find that few natural niches in the ordinary environment do not have an appropriate sparrow. A glance at the few sparrows here considered will help to prove this. For the fresh-water swamps, we have our swamp sparrow, and for the salt-water marshes the seaside sparrow. Open fields of the average type support field sparrows, and the drier fields have vesper sparrows and grasshopper sparrows. Brushy lots are favored by indigo buntings, and the open barren lands of the far north by snow buntings. Orchards are hang-outs for chipping sparrows, which may be found in many other places as well, and our trees and shrubs around human habitations, strangely enough, seem to be well favored by the cardinals and even the rose-breasted grosbeaks that now and then drop down to our gardens for a meal of potato beetles. Woodlands and towhees go together well, and if we wish we can continue this classification to find sparrows that are most commonly found in evergreens, while others seek deciduous trees. We can find, with no trouble whatever, that our sparrow population varies with the season, and that tree sparrows, snow buntings and juncos are usually with us regularly each winter, while the evening grosbeaks are hardly so dependable.



EVENING GROSBEAK



CARDINAL



ROSE-BREADED GROSBEAK



REDPOLL



GOLDFINCH



PINE SISKIN

An examination of the charts accompanying this discussion will suggest the kinds of sparrows you should expect to find wherever you may live in North America at almost any season of the year. We cannot, of course, cover all kinds for all places in a list of twenty-two birds. In earlier inserts we have given further help on some other sparrows, such as the lark sparrows so conspicuous in the middle-West, where the dickcissel also is found. We have also helped you earlier with the house finch of the far West, and the lark bunting and lazuli bunting, also of our plains areas. We have even given you help in the insert dealing with "birds in gilded cages." There we gave you a few interesting slants on the common canary of our households.

In our highly competitive world, we judge many of the fellow residents of our planet by the food they eat. We can here only suggest that you review the accompanying tabular material. There you will find a surprising variation, not only in the foods of different sparrows, but in the food of individual kinds at different times of the year. You may, if you have sufficient imagination and background, recognize an appropriateness in the emphasis on insect food during the nesting season, and an appreciation of what this means in matters of controlling insects during the time of year when their numbers are expanding beyond what may seem to be reasonable. If we do not think carefully, we may be impressed by some of the statements we read, and credit some of our feathered friends with services that may be not so important as we at first think. That figure about the tons of weed seeds eaten by Iowa tree sparrows may be an example. True, the birds may eat that great volume of things we do not like, but what they eat is largely harvestable surplus and in reality probably has little effect on the weed population of the State.

Sparrows offer us a wonderful opportunity to practice

sanity in the drawing of generalizations. We may say that they are more abundant than are other groups of birds, but what do we mean by this? If we mean that there are more species of sparrows than is customary with other groups, that is one thing. If we mean there are actually more individual sparrows flying around than there are of any other comparable group, then that is another. This may well mean that there may be a few kinds of sparrows that are rare in our locality, and it might mean that, while there were a great number of individuals of one species, most of the other species would be rare.

We can study sparrows with profit from many angles. How do their bills differ, and how are these differences associated with food habits? How does it happen that goldfinches in late spring appear drab and uninteresting, and yet a few weeks or even days later they blossom like dancing bits of brilliant sunlight, almost dazzling us with their appearance? Just how do sparrows change their colors, and do they all make the change in the same way? Then there are the variations in home responsibilities assumed by the males of different sparrows, differences in mouth colorings of young, differences in nesting sites, materials and structures, and many other things that are worthy of the best efforts of our inquiring minds. The accompanying charts may be helpful to the uninitiated, but the birds themselves should provide the final authority.

It would seem then that no matter how we look at these birds, which by some are considered as almost unworthy of our attention, they really do contribute to the nature of the world about us. Song, beauty, economics and challenges to our intellect and to our emotions make us feel that sparrows can be insignificant only to those who are too blind to give them even casual attention. I hope that you are not among that group.

NAME	CARDINAL GROSBEEK <i>Richmondia cardinalis</i>	ROSE-BREADED GROSBEEK <i>Pheucticus ludovicianus</i>	INDIGO BUNTING <i>Passerina cyanea</i>	EVENING GROSBEEK <i>Hesperiphona vespertina</i>
DESCRIPTION	Length to 9¼ inches, with 4¾-inch tail and 12-inch wingspread. Weight of male to 2 ounces. Female smaller. Male scarlet, except for black around the bill, and with a conspicuous crest. Female yellowish-brown with some red mixed in, and with large crest and heavy conical bill as in the male.	Length to 8½ inches, with 3½-inch tail and wingspread of to 13 inches. Female, smaller. Adult male in spring black and white with brilliant triangular, rose breast patch and delicate rose-red under wings. Female streaked brown with broad white line over eye and white wing bars. Conspicuous coarse bill in both.	Length to 5¾ inches, tail to 2-2/5 inches, about size of chipping sparrow. Male brilliant blue all over but darker on head. Female, dingy, whitish, rusty above, with indistinct stripes below, without wing-bars. Male browner in fall. Young male may show some blue and brown, weakly striped below and washed above.	Length to 8½ inches, making it one of largest of sparrows, tail to 3-1/5 inches. Sexes about equal in size. Like a large thick-billed, whitish-billed, yellow and black starling. Male yellow with black and white wings. Female with colors more dulled and sometimes smaller. Characteristic undulating flight. Found in flocks.
RANGE AND RELATIONSHIP	Six subspecies include the Eastern, Florida, Louisiana, Gray-tailed, Arizona and San Lucas. Eastern is resident from southern Ontario to South Dakota and south to the Gulf States and is rarely found north to New Brunswick, and in Connecticut, Massachusetts, Michigan and Colorado. Other forms extend range.	Breeds from Cape Breton Island to central Mackenzie and south to Georgia, Missouri and Kansas. Winters from Southern Mexico and Yucatan to Colombia, Venezuela and Ecuador, but also found sometimes in Cuba, Jamaica, Haiti, the Bahamas, California, Colorado and Arizona.	Breeds from southern New Brunswick to North Dakota and south to central Gulf States, being probably the only all blue bird in its range, although the mountain blue bird to the west is also all blue but larger. Winters from Cuba and Yucatan south to the Panama area. Also found in Bahamas, Colorado and Saskatchewan.	Three subspecies: Eastern, Western and Mexican, with Western sometimes called the Columbian. Eastern ranges from Vermont to western Alberta and south to northern New York and Minnesota in breeding season and winters south to Missouri and Maryland. Other subspecies extend range to Pacific Coast and to Mexico.
REPRODUCTION	Nests either in conifers, or in other trees or shrubs. Nest loosely built of twigs, leaves, bark strips and grass, with lining of fine hair or grass, from 3-30 feet above ground, usually low. Eggs 3-4, whitish, greenish or bluish marked with brown or lilac. Incubation 12 days, by female. 1-3 annual broods.	Nests in shrubs, thickets and hedges commonly, but not always near water, usually 6 to 20 feet above ground, near tree trunk or on forked limb. Nest of crudely assembled grasses and twigs with little lining. Eggs 3-5, blue-green with red or brown spots, 1-1/5 by 4/5 inch, incubated 14 days by both sexes. 1 annual brood.	Nest usually in bush crotch or low shrubs in cut-over land usually little over a yard above ground, of twigs, grass, hairs and feathers. Eggs 3-4, pale blue or greenish white rarely with brown specks, 4/5 by 3/5 inches, incubated about 12 days by female. Young helpless at first. May be 2 annual broods.	Nests in trees, usually in tops of tall trees, and most difficult to locate. Some may be in willows 10 to 20 feet above ground. Nest of Eastern usually 20-50 feet up in spruces, of sticks and rootlets with hair and bark lining. Eggs, 3-4, green with pale brown blotches, .9 by .65 inches, incubated 13-14 days.
ECOLOGY	Food usually about 29% animal matter and 71% vegetable. Animal matter includes caterpillars, beetles, scale insects, grasshoppers, cotton boll weevils. Plant matter includes 24% wild fruit and 9% grain and weed seeds including ragweed. Call, a cheery, loud whistle pitched at 2200-4375 c.p.s.	Food about evenly divided between plant and animal matter. In nesting period may be greater emphasis on animal matter. <i>Chink</i> call, robin-like song, thick bill that is light colored identify bird readily. Male acquires adult plumage in the second fall. Temperature 100.4° to 110°F.	Feeds on insects, particularly brown-tail moths and their caterpillars, beetles including click beetles, and grasshoppers. Eats little if any grain in North, although in South food is largely weed seeds in winter. Male sings "Fire where where, here here, see it see it" at 3250-8875 c.p.s. from high perch interminably.	Food is essentially seeds and fruits — particularly in winter — of woody plants. Will haunt feeding stations with sunflower seeds. In summer about 1/5 the diet is beetles, bugs, caterpillars, spiders and similar invertebrates, the remainder being seeds. Erratic in abundance during the years.
ECONOMY	State bird of Kentucky, North Carolina, Illinois, Ohio and Indiana. Estimated that it does 15 times as much good as damage, and it certainly is a pleasure to all bird lovers. Formerly considered as a cage bird worth \$10, but it is now illegal to keep it in captivity. Family life with attentive male is most interesting to watch.	A most welcome visitor because of its beauty. It may harm garden crops such as green peas but it kills great numbers of garden pests, particularly favoring Colorado potato beetles that are avoided by many other birds. It seems to be more abundant in the western part of its range than in the East.	Its song, its color, its habit of singing from the highest available perch, its persistence appeal to all of us who know it, and we come to search every treetop for its silhouette whenever we hear the song. Body temperature is about 107°F. and speed about 21 m.p.h. A deservedly popular summer bird.	May appear in good-sized flocks and remain in a neighborhood as though fixed and then suddenly appear elsewhere. May do some damage to tree buds, but this is probably of little importance as the numbers of birds are usually too few. Their appearance in East usually is so spectacular that it wins recognition in local presses.

PURPLE FINCH <i>Carpodacus purpureus</i>	PINE GROSBKAK <i>Pinicola enucleator</i>	GOLDFINCH <i>Spinus tristis</i>	PINE SISKIN <i>Spinus pinus</i>	REDPOLL <i>Acanthis flammea</i>
Length to 6-1/3 inches, tail to 2 1/2 inches, being about the size of a house sparrow and looking like one that had been dipped in some red fruit juice. Male rosy-red instead of purple, as the name implies, with color most brilliant on head and rump. Female like a heavy-billed, striped brown sparrow with a white line over eye.	Length to nearly 10 inches, tail to 4 1/2 inches, wingspread to nearly 15 inches. Female usually the smaller. Older males mostly dull rose-red with 2 white or pale rose wing-bars. Immature males and mature females gray, with crown and rump brassy or russet. Young males sometimes reddish rather than brassy or orange.	Length to 6 inches, tail to 2 inches. Weight to 1/2-ounce. Breeding male brilliant yellow with black on tail, wings and crown. Female dull yellow rather than yellow, and dull black instead of brilliant black. In winter sexes alike, being evenly gray above and without streaks such as are seen on the somewhat similar pine siskin.	Length to 5 1/4 inches, tail to 2 inches. Weight, to nearly 1/2-ounce but female smaller. Heavily streaked, active brown sparrow showing yellow flash on wings and tail, lighter below. Shows two wing-bars. Color may change with wearing off of feather tips yielding breeding plumage. One adult annual molt.	Length to 5 1/2 inches, with 2-2/3-inch tail and 8-4/5-inch wingspread. Female smaller than male. Male with crimson cap, pinkish-red breast and rump and black chin-spot, streaked dark on upper parts and lighter and less streaked beneath. General appearance of streaks and spots. Female duller than male.
Eastern and California subspecies extend range across the continent. Eastern breeds from Newfoundland to northwestern British Columbia and south to central Minnesota and Maryland, wintering east of Minnesota and Texas. California subspecies ranges from British Columbia to Lower California. Favors small evergreens.	Seven subspecies include Alaska, Kamchatka, Canadian, Kodiak, Queen Charlotte, Rocky Mountain and California. Canadian is breeding from Labrador to northern Mackenzie and south to northern New Hampshire and Manitoba. Winters south to Kansas and New Jersey, with subspecies extending range as names suggest.	Three subspecies include the Eastern, Pale and Willow goldfinches. Eastern breeds southern Manitoba across Canada to Newfoundland and south Colorado, Arkansas and northern Georgia. Winters through most of breeding range and south to Gulf Coast, with some birds being resident and some migrant, making abundance locally variable.	Two subspecies include the Northern and the Mexican forms. Distributed throughout North America, breeding from central Alaska to central Quebec and south to central California, central and southern New Mexico and North Carolina. Winters over most of North America and south into Mexico.	Three subspecies include the Common, Holboell's and Greater redpolls. Common ranges from Gulf of St. Lawrence to Alaska and south to northern Alberta and northern Quebec in breeding season, and winters in northern United States and south to northeastern California and South Carolina.
Nests in hedges, or, more commonly, in evergreens at heights to 60 feet above ground. Nest of vegetable matter, built by female and lined with hair. Eggs 4-5, greenish-blue with larger end black-spotted, 11/12 by 7/10 inches. Incubation by female only for 13 days and but one annual brood ordinarily.	Nests shallow, up to 8 feet above ground in a thick evergreen of twigs, with lining of fine grass material or hair. Eggs 3-4, 1 by .7 inches, slate-green or pale bluish-green spotted with brown and lavender, mostly at larger end and then in a wreath form. Incubation to 14 days by female only. 1 annual brood.	Nesting usually in trees and shrubs. Nest bulky, from 4 to 20 feet above ground, somewhat cup-shaped with high margins, of plant material such as grasses and fine bark, with lining of down from dandelion in early season and milkweed in late season. Eggs, 4-6, pale-blue without spots, 3/4 by 1/2 inch, incubated by female 11 days.	Nests usually in a coniferous forest. Nest usually of twigs and rootlets, with lining of plant-down and long hairs in saddle form on a limb 8-30 feet above ground. Eggs, 3-6, pale green-blue, with sparingly distributed brown spots, 2/3 by nearly 1/2-inch, incubated chiefly by female 12-14 days. 1-2 annual broods.	Nests commonly in low, grassy tussocks in thickets of woody plants or in forests of spruce, birch or willow. Eggs 3-6, pale bluish-green, marked for most part at larger end with reddish-brown spots, 2/3 by 1/2-inch. Nesting period is usually in June, although there may be a later second brood each season.
A fruit, bud, blossom and insect eater working for the most part on and around woody plants, but probably not entitled to its bad reputation as a bud destroyer. It may eat small fruits such as raspberries, elderberries, dogwoods and viburnums, but may eat many insects that are injurious to these plants as well, particularly in summer.	Food in winter almost wholly fruits of woody plants, mostly conifers and tall weeds. In summer up to 16% may be of grasshoppers, beetles, ants, caterpillars and spiders largely fed to nestlings. Considered harmless. Feed usually in flocks, a flock possibly cleaning a tree rather well of its fruits during a feeding session.	Food is almost exclusively seeds, and largely those of bad weeds such as dandelion, thistle, burdock and chicory, although it may include sunflower, hemlock, birch, alder, spruce and sycamore. Act in flocks and have characteristic canary call pitched at 2750 to 7400 c.p.s. Speed is estimated at 18 m.p.h. flight undulating.	Birds commonly in flocks. Recognized by forked tails, streaked plumage, goldfinch-like notes resembling repeated tit-a-tit. May rarely be a pest in crops, but commonly food is fruits of woody plants with the seeds of arbor vitae ranking high as a favorite. May eat insects such as caterpillars, grasshoppers and flies.	Food almost entirely weed seeds including ragweed, pigweed, smartweed, lamb's-quarters and foxtail, but also including seeds of woody plants such as cedar, birch, alder, linden, tamarack and elm. In summer feeds largely on plant lice, ants, spiders, small cocoons, small caterpillars and insect eggs.
May eat some weed seeds in winter so it really has a varied diet. It is seasonally conspicuous, being at its best in spring when the males seek a high perch and sing a song somewhat like that of a warbling vireo. This is one bird whose common name is a real misnomer.	May do some damage to buds of fruit trees and ordinarily they are too uncommon to be considered as anything but unusual and may be, therefore, welcome visitors. Abundance will vary greatly, depending usually on differences in availability of favored foods.	State bird of Iowa, New Jersey, and Washington. Might be a pest to a commercial grower of seeds of garden flowers or of sunflowers, but otherwise is a useful destroyer of weed seeds. Its rollicking courtship call, "perchicoree," accompanied by ascending undulating spiral flight is pleasing to all bird lovers anywhere.	Ordinarily of little economic importance, but sometimes may be a crop pest. May eat tree buds, but probably not to extent to cause serious damage. Enormous flocks often attract public attention by sound and by behavior of keeping together and simultaneous action. Used to be considered acceptable cage birds when captivity was legal.	Formerly considered a good cage bird, but this practice is fortunately no longer popular or legal. It crosses with other cage birds and remains active and apparently happy in captivity. A good flock of these birds active in a weed patch or a gray birch in blizzard make a winter field trip really worth while.

NAME	RED CROSSBILL <i>Loxia curvirostra</i>	RED-EYED TOWHEE, CHEWINK <i>Pipilo erythrophthalmus</i>	VESPER SPARROW <i>Poocetes gramineus</i>	SLATE-COLORED JUNCO BLACK SNOWBIRD <i>Junco hyemalis</i>
DESCRIPTION	Length, to 6-2/5 inches, tail to 2-1/6 inches. Weight, to 3/4-ounce. Female smaller than male. Male dull red with brownish wings and tail, no wing-bars. Female and young dull olive-gray with plain dark wings. Female with yellow on rump. 2nd year male like female but more or less red spotted.	Length to 8 3/4 inches with 4.1-inch tail and 12-inch wingspread. Female smaller than male. Male with head and upper parts black, sides broadly chestnut, but separated by white belly and ending in black throat and breast. Iris bright red. Female, black of male replaced by gray-brown and young resemble the female.	Length to 6-2/3 inches with wingspread of 11 inches, and its 2 3/4-inch tail bearing white outer tail-feathers that are flashed conspicuously in flight. Weight 1 ounce. Breast streaked. Bend of wing chestnut. Much like a song sparrow except for tail-feathers, but lacks conspicuous breast spot.	Length to 6 1/2 inches, with 2.7-inch tail and 10-inch wingspread. Weight to .7 ounce. Female smaller than male. Male dark slate-gray above and across the breast and throat, but conspicuously light gray beneath and with outer tailfeathers white. Female duller and with second pair of outer tailfeathers grayer.
RANGE AND RELATIONSHIP	Five subspecies include Red, Newfoundland, Sitka, Bendire's and Mexican, with the Red breeding from central Quebec to central Alaska and south to northern Georgia and Oregon. Winters south to Florida and northern Texas. Related white-winged crossbill has 2 white wing bands on each wing in both sexes.	Three subspecies include the Eastern Red-eyed, Alabama and White-eyed but westerly there are the closely related Green-tailed (<i>Oberholseria</i>) and 4 species of <i>Pipilo</i> in which <i>maculatus</i> has 10 subspecies, <i>fuscus</i> , 8; <i>consobrinus</i> , 1 and <i>aberti</i> , 1, all of which are western. Red-eyed range is given below.	Three subspecies include Eastern, Western and Oregon. Eastern breeds from Cape Breton Island to central Ontario and south to Minnesota, Nebraska, Missouri and North Carolina. Winters in southern half of its breeding range and on south to southern Florida and mid-Texas.	Two subspecies include the Slate-colored and the Carolina. Slate-colored breeds from central Quebec to northwestern Alaska and south to southern Alaska and Pennsylvania. Winters through eastern United States and southern Ontario, south to Gulf Coast. Has spectacular spring migration. 7 related species.
REPRODUCTION	Nests in evergreen forested areas, usually low but well hidden. Nest of twigs with roots and bark added and with lining of moss, hair, feathers or fur. Eggs, 4-5, bluish or greenish, pale, spotted, speckled or pencilled in dark purple, .75 by .55 inches, incubated 12-14 days by female. Two annual broods.	Nests in brushlands or open woodlands, on or near the ground, rarely being up over 3 feet. Nest of grass and leaves, with fine lining. Eggs 4-6, white or pinkish-white, uniformly speckled and sometimes blotched at larger end with reddish-brown, .96 by .7 inches. Incubation for 12-13 days by female with male help.	Nests usually on dry ground along open roadsides or in fields and pastures, usually in a slight natural depression. Nest of grasses with a finer grass lining, or in North with needle lining. Eggs 4-5, dull white thickly blotched and speckled at larger end with brown, 7/8 by 5/8 inches, incubated 11-13 days.	Nests on ground in woodlands or brushy pastures, usually well hidden by a protective cover. Nest of grassy materials with lining of finer stuffs, such as rootlets, and mosses. Eggs 3-6, bluish, greenish, grayish and thickly spotted with fine brown, lilac or purple marks. Incubation 11-12 days. 4/5 by 3/5 inches.
ECOLOGY	Food primarily seeds and fruits of spruces, pines and other cone-bearers in winter, and in summer some insects, plant galls, spiders and the like, but even then diet may be 68% conifer seeds. Bird is not shy, has speed of 37 m.p.h., roving in nature but small flocks act in unison.	Red-eyed towhee male sings from elevated perch in own territory calling <i>chewink</i> clearly and repeatedly or giving a prolonged musical twitter. It breeds from southern Ontario to southeastern Saskatchewan and south to Kansas and northern Georgia and winters from southern Nebraska to Ohio Valley and south to central Texas and Florida.	Food more largely animal matter than with most sparrows, including cutworms, grasshoppers, beetles, ants and flies, and, surprisingly enough, also small earthworms and slugs. Incubation is by both sexes and there may be 3 annual broods. Song pitch is 2750 to 6600 c.p.s., and song has strong emotional quality.	Food estimated at 78% vegetable and 22% animal with 1/4 of the latter being noxious insects and a great proportion of plant materials being unwelcomed weeds. In winter food is almost exclusively weed seeds, of which 1/3 are ragweed and smartweed. Speed 17 m.p.h. Song in spring a welcome twitter pitched at 3850-5500 c.p.s.
ECONOMY	Not considered of economic importance, although sometimes fruit crops have suffered from attack. Legend has it that twisted beak was caused by attempt of bird to remove nails from the crucified Christ, which also accounts for red on throat region. A more satisfactory explanation is tied with cone-seed food habit.	Considered by ornithologists as being exceptionally beneficial in food habits. Interesting to naturalists, who are surprised at noise made by a scratching towhee working in dried leaves and amused by scratching behavior, once it is seen. It does not ordinarily persist close to habitations, possibly in part because of ground-nesting habit.	A most useful sparrow, well entitled to every protection at all times. An excellent companion for a walk, interesting us as it flies up from the road ahead, flashes its white tail feathers and then takes off again as we approach. This may or may not be a decoy procedure if near the nest.	A most useful species and a common visitor to winter feeding stations, from which it may be driven by English sparrows and the larger tree sparrows. They seem just as active in most severe weather as at times that to us seem to be more comfortable. Cannot be easily confused with associated species.

TREE SPARROW <i>Spizella arborea</i>	CHIPPING SPARROW <i>Spizella passerina</i>	FIELD SPARROW <i>Spizella pusilla</i>	WHITE-CROWNED SPARROW <i>Zonotrichia leucophrys</i>	WHITE-THROATED SPARROW <i>Zonotrichia albicollis</i>
Length to 6½ inches with tail nearly 3 inches long and 9¾-inch wingspread. Weight to 1 ounce. Female smaller than male. Chestnut cap, with two conspicuous wing-bars and conspicuous dark spot in middle of breast, but without stripes or streaks below or on throat region. Back striped with black and brown. Breast gray. Bill yellow below, black above.	Length to 5-5/6 inches with 2-2/5-inch forked tail. Cap chestnut. Light line over eye. Cheeks, sides of neck gray and grayish-white beneath without markings. No distinct wing-bars. Bill black. Female slightly smaller than male. Young with faint streaks on the under sides. Active and alert.	Length to 6 inches with 2-4/5-inch tail and 8½-inch wingspread. Female smaller than male but sexes colored alike. A plain sparrow with reddish upper parts, a clear unmarked gray breast, an inconspicuous eye-ring and a pinkish or flesh-colored bill, unlike that of other sparrows with which it might be confused.	Length to 7½ inches with 3.2-inch tail and 10.5-inch wingspread. Female smaller than male. With a broad white crown stripe bordered in black and a white stripe over eye. Cheeks gray. Back striped in brown and light gray. Gray beneath. Throat lighter. Two distinct wing-bars. Young birds in fall have crown stripe gray.	Length to 7¾ inches with tail to 3-1/3 inches and wingspread to 10 inches. Weight 1¼-ounces. Female smaller than male. Large bird with clear gray breast, conspicuous white throat, black and white striped crown and yellow on the line between the eye and bill. Female duller than male, as are the young of the year in the first fall.
Two subspecies, the Eastern and the Western. Eastern breeds from Newfoundland to central Mackenzie and south to Nova Scotia, southern Quebec and southern Ontario. Winters from southern Ontario to Minnesota and south to Oklahoma and Georgia. Western subspecies extends species range from British Columbia to California. Largely field species.	Two subspecies include Eastern and Western. Eastern breeds from Cape Breton Island to the Yukon and south, northern British Columbia, Texas, Mississippi and Georgia. Winters in Southern States south of Oklahoma and New Jersey. Western ranges from British Columbia to northern Mexico.	Two subspecies include Eastern and Western, of which Eastern breeds from Maine and southern Quebec to southern Minnesota and south to Texas and Florida. Winters in southern portion of range from New Jersey to Missouri and south to the Gulf Coast. Western ranges west to Montana, southern Texas and Nuevo Leon.	One common subspecies breeds from central Greenland and eastern Quebec to British Columbia and south to central California and northern Quebec. Winters from Ohio and Lower California to Florida and central Mexico. It is conspicuous particularly during its northern migration, which it makes with the white-throated sparrows.	Breeds from Newfoundland to northern Mackenzie to Montana, central Minnesota and highlands of New York and Pennsylvania. Winters from Missouri to Pennsylvania and south to Florida and northern Mexico. Sometimes found in Oregon, California, Utah, Colorado and Lower California.
Nests usually near water in thickets near timber, on the ground or in low vegetation. Nest of grasses, roots and hairs with a lining of fine material sometimes including fur. Eggs 4-5, light green to ashy to greenish-blue with reddish-brown markings, .7 by .8 inches. Incubated for 11-14 days and usually with but 1 annual brood.	Nests frequently near habitations of man in shrubbery, evergreen trees or windbreaks, from 1 to 25 feet above ground. Nest a well-made grass cup with lining of hair that persists usually after the grass has rotted away. Eggs 3-5, greenish-blue lined, spotted or dotted with black or lilac, 4/5 by 9/10 inches. Incubated 10-12 days.	Nests on or near ground. Nest of grasses and rootlets with lining of finer grasses, hair, and fine bark fiber. Nest may be to 10 feet above ground in open fields or even in woodlands. Eggs 4-5, pale greenish-blue or bluish-white, speckled, spotted or lined with brown, chiefly at larger end, ¾ by 9/16 inches, incubated 13 days by female.	Nests on the ground in woods or thickets or in low bushes. Nest of grasses, rootlets lined with grass, fine rootlets and hair or with leaves sometimes. Eggs 4-5 blue-white to greenish-white, with many brown spots and some black markings. Incubation is 12-14 days by female and there are usually 2 annual broods.	Nests on ground or in low bushes or thickets, particularly near wet spots. Nest of grasses, rootlets, bark and mosses with finer lining. Eggs 4-5, bluish-white or grayish more or less heavily spotted and speckled with dark brown or black or reddish-brown, 4/5 by 3/5 inches. Incubated 12-14 days by female.
Food essentially weed seeds, with an estimated 875 tons of weed seed harvested by this species each winter in Iowa alone. Within United States boundaries the food is probably 98% weed seeds including ragweed, pigweed, lamb's-quarters knotweed, chickweed, wild sunflower. Insects eaten include beetles, ants, caterpillars and grasshoppers.	Food largely small insects and grass seeds gleaned from the ground or from vegetation above ground, estimated that 2/5 is animal matter including canker worms, army worms, tent caterpillars, gypsy moths, plant lice and cabbage worms. Seeds include ragweed, purslane, plantain and grasses.	Food animal matter 41% including click beetles, May beetles, tiger beetles, grasshoppers, caterpillars, ants, flies, spiders. Vegetable matter includes seeds and fruits of knotweed, purslane, sorrel, crab grass, poverty grass and some grain, mostly oats. Considered most beneficial by Federal authorities.	Food is 75% seeds, particularly ragweed, chickweed, lamb's-quarters and wild sunflower, including a surprisingly small amount of grain and that mostly waste. In spring and summer, and particularly during nesting time, it eats many insects. Its song has been described as a clear soft whistle ending in a husky whispered whistle.	Food mostly seeds or at least 4/5 vegetable matter, with ragweed, knotweed and chickweeds ranking high. Eats seeds of poison ivy and of other woody plants, such as grapes, dogwoods, mountain ash, blackberry and blueberry. Hops, digs with bill and scratches for food.
One of best of winter visitors with vigor enough to hold own in competition with other species at feeding stations. Its cheerful twitter, even on a blizzard day, makes a field trip in winter more pleasant than it would otherwise be. It can hardly be considered as harmful under any circumstances or anywhere in its range.	One was observed to carry 50 caterpillars to its nest in a single hour. Undoubtedly a useful species except possibly on newly seeded lawns, but this should be of minor importance. Song a prolonged chipping, pitched for Eastern at 3475-8400 c.p.s. and for Western at 3300-5500 c.p.s. Long may it live to please us.	A welcome summer sparrow with its descending series of chipping sounds that range from 3650 to 5100 c.p.s. Its apparent plainness makes it uninteresting to most who seek their inspiration through sight, but its song rings through our barrier of reserve and wins it a place in our hearts always.	Its home is commonly in or near agricultural lands, but its food, being largely weed seeds, makes it a useful species. Some authorities claim it of neutral importance but the Federal agencies rate it as a "valuable weed destroyer." Its seeming wistful habits endear it to those who have occasion to know it reasonably well.	Song is one of the best and has been described rather poorly as being a plaintive "Ol' Sam Peabodee." This is the favorite bird song of the writer, and probably always will be. The species is undoubtedly useful and is worthy of every protection, which, being a large sparrow, it probably does not always get from strangers.

NAME	FOX SPARROW <i>Passerella iliaca</i>	SWAMP SPARROW <i>Melospiza georgiana</i>	SONG SPARROW <i>Melospiza melodia</i>	SNOW BUNTING, SNOWFLAKE <i>Plectrophenax nivalis</i>
DESCRIPTION	Length to 7½ inches with 3-inch tail and wingspread of nearly 1 foot. Female smaller than male. Weight to 1½ ounces. Brown with bright red on the tail, gray on the neck and conspicuous brown streaked breast resembling that of the spotted breast of a wood thrush somewhat, but more nearly like that of hermit thrush.	Length to nearly 6 inches with 2-1/3-inch tail and 8-inch wingspread. Female smaller than male. Might be confused with song sparrow, but is redder, stouter, with reddish cap, light throat, clean gray breast. Larger than the chipping sparrow. Young brownish with finely streaked breast somewhat like that of song sparrow.	Length to 6-4/5 inches with 3-inch tail and 9-inch wingspread. Weight to 7/8 ounce. Female smaller than male. Reddish-brown with conspicuous large central black spot on darkly streaked breast, a rounded tail that is violently pumped up and down, crown brown with inconspicuous central light stripe.	Length to 7-1/3 inches with 3-inch tail and 13-inch wingspread. Female smaller than male. Largely white showing conspicuously in flight. Breeding male has black back, which is veiled in brown the preceding winter but disappears with the spring. No bird of its size shows so much white so identification is simple.
RANGE AND RELATIONSHIP	Sixteen subspecies cover practically whole of North America. Eastern subspecies breeds from tree limit in northern Alaska to Labrador and south to northern Manitoba and northern Quebec. Winters from Ohio and the Potomac Valley to Florida and Texas, with other subspecies extending range west and south to Lower California.	Breeds from Newfoundland to central Alberta, and south to New Jersey and northern Nebraska. Winters from New York to Nebraska and south to Gulf Coast from Florida to Jalisco, Mexico. Has been reported in Bermuda, California and Utah. It haunts brushlands near the edges of cattail marshes for the most part.	At least 26 subspecies recognized covering the continent practically, and including Eastern, Mississippi, Dakota, Mountain, Aleutian and San Diego. Eastern breeds from Mackenzie to Cape Breton Island and south to Texas, Missouri and Florida, for the wintering period the southern breeding limit being from Missouri to North Carolina usually.	Two subspecies include the Eastern and the Pribilof. Eastern breeds from Greenland to northernmost Alaska and south to northern Mackenzie, northern Ungava and northern Labrador. Winters from northwest Alaska to northern California and east to New Jersey and northern Labrador.
REPRODUCTION	Nests on or near ground in thickets or evergreen woodlands, commonly on a sheltered branch. Nest coarse, large, well-made, of grass, leaves, moss and hair or feathers. Eggs 4-5, 15/16 by 7/10 inches, clay-green dotted with dull reddish-brown. Weight 6½ g. Incubation 12-14 days for most part by female.	Nests usually near or in wet meadows. Nest in a tussock or low shrub composed of grasses or sedges, and either roofed by them or not. Eggs 4-5, smaller than those of song sparrow being 5/6 by 3/5 inches, but scarcely distinguishable from them in color and markings. Incubation by female for 12-15 days. 1-2 annual broods.	Nests among grasses, or in shrubbery, or in ornamental plantings, often near water. Territory defended by male. Nest of grass and weeds with fine lining, occasionally in nesting boxes. Eggs 3-7, grayish-green, pinkish or bluish with brown or lilac spots and blotches, 15/16 by 2/3 inch. Incubation 10-14 days by female, 2-4 broods.	Nests are found on barren ground among rocks and rubble. Nest composed of grasses and other plant material and is usually well hidden. May be lined with feathers or fur or hair. Eggs 4-8, greenish to white or bluish, blotched or spotted with brown, yellow-brown or blackish-brown, 15/16 by 2/3 inch. Incubation 14 days by female.
ECOLOGY	During early northern migration this sparrow confuses many into thinking thrushes have arrived. Its conspicuously broad, reddish tail and marked breast add to the confusion. It sings some in our northern States but in breeding territory has a fine prolonged, tinkling, bell-like song that matches its other appeals.	Food largely insects and weed seeds though one writer reports overall of 53% as vegetable matter. It is listed as beneficial by Federal authorities. Young birds show a yellow mouth lining differing from the pink or gray characteristic of the young of song sparrows. Song resembles a sweetly monotonous chipping sparrow at best.	Food listed as 2/3 vegetable matter, composed largely of weed seeds though animal matter includes a wide range of invertebrate animals. Little if any grain eaten. A few remain north during severe winter weather while others move north early. Full song a vigorous "hip-hip-hooray-boys Spring is here" with a pitch varying from 1900 to 7700 c.p.s.	Food in winter more than 96% weed seeds and in summer probably 70% weed seeds. One stomach in February was found to contain 1500 pigweed seeds and usually at least one-half the food is seeds of pigweed or ragweed in winter. Insect foods include caterpillars, beetles and crane flies. Spiders also are eaten.
ECONOMY	Food is about half weed seeds and half insects at times, although the overall estimate for the year rates seeds at 86% and animal matter as the remainder. The fruits eaten are wild for the most part, and it would be difficult to rate the bird as injurious no matter how hard one tried. Its beauty should be enough to win its support by all.	Its haunts bring it outside the range of influence on most cultivated crops, but it nevertheless may be considered as useful. Young may stay close to nest and in it until nearly two weeks old if undisturbed. Adult plumage is assumed with the first molt of the fall.	A most welcome member of our bird fauna, even though a vigorous male nesting in our shrubbery may repeatedly through the summer season fight his reflection in our windows during the long breeding season. Its initial spring song is a poor imitation of the real thing but anyway it is the forerunner of something worthwhile.	Formerly were shot for market, one city having reported having 80,000 in cold storage at one time. Such slaughter or any, for that matter, is now illegal, but birds do not seem to have regained their former abundance. Alive are obviously essentially useful and worthy of every protection.